Master Budgets and Planning

Chapter 22

Wild and Shaw

Fundamental Accounting Principles

25th Edition

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Chapter 22 Learning Objectives

CONCEPTUAL

C1 Describe the benefits of budgeting.

ANALYTICAL

A1 Prepare a direct labor budget for a service firm and analyze revenue per employee.

PROCEDURAL

P1 Prepare the operating budgets of a master budget for a manufacturing company.

P2 Prepare a cash budget for a manufacturing company.

P3 Prepare budgeted financial statements.

P4 Prepare each component of a master budget for a merchandising company. (Appendix 22A)

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Learning Objective C1

Describe the benefits of budgeting.

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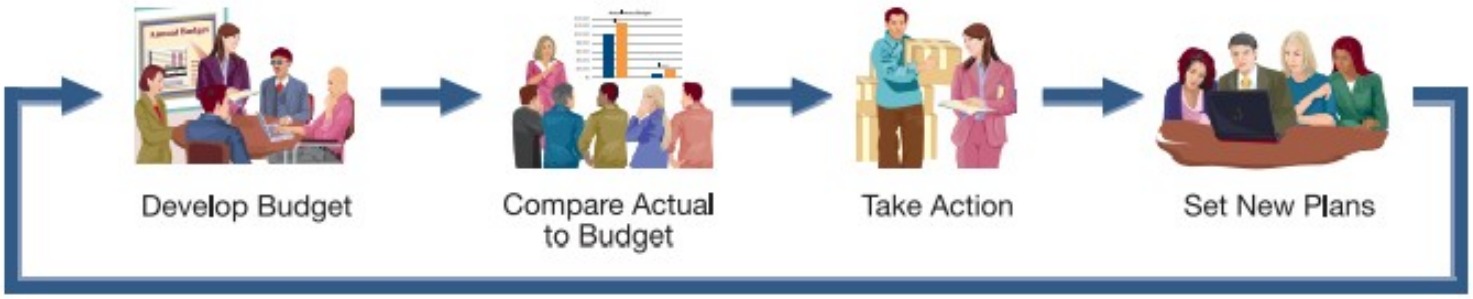
Budgeting Process

Exhibit 22.1



- **Budgeting – process of planning future business actions and expressing them as formal plans.**
- **Budget – formal statement of a company's plans in dollars.**
- **Budgetary control process – management's use of budgets to see that planned objectives are met**

Learning Objective C1: Describe the benefits of budgeting.

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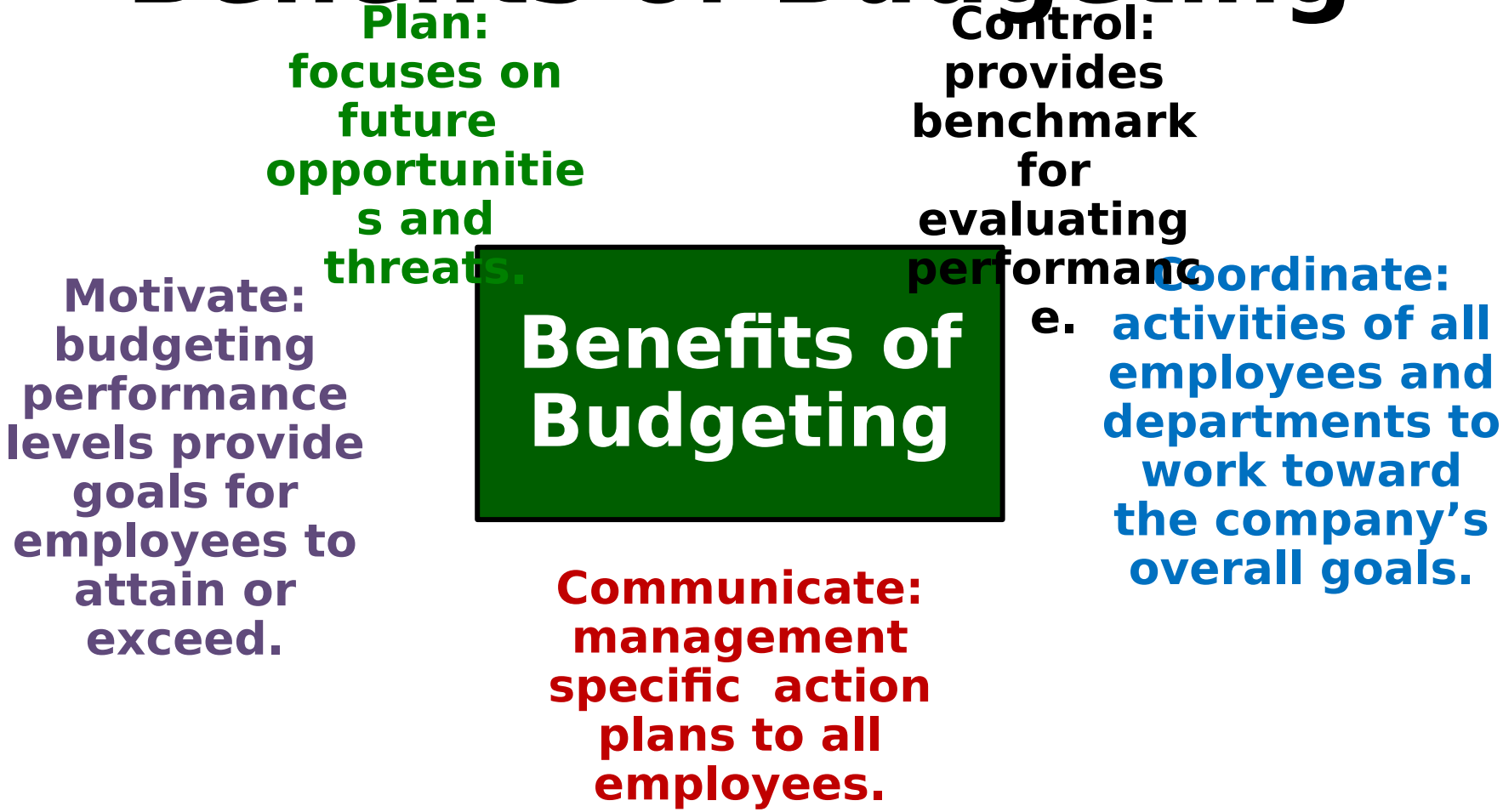
Benefits of Budgeting


Plan: focuses on future opportunities and threats.
Control: provides benchmark for evaluating performance.
Motivate: budgeting performance levels provide goals for employees to attain or exceed.
Benefits of Budgeting
Coordinate: activities of all employees and departments to work toward the company's overall goals.
Communicate: management specific action plans to all employees.

Learning Objective C1: Describe the benefits of budgeting.

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Budgeting and Human Behavior

Budgets can be a positive motivating force when:

1. Goals reflected in budget are challenging but attainable.
2. Employees affected by budget help prepare it.
3. Evaluations offer opportunities to explain differences between actual and budgeted amounts.

Potential negative outcomes include:

4. Pressure to meet results can employees to engage in unethical behavior or commit fraud.
5. Employees might understate sales budgets and overstate expense budgets to allow a cushion.
6. Employees might spend budgets on unnecessary items to ensure budget is not reduced next period.

Learning Objective C1: Describe the benefits of budgeting.

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Budget Reporting and Timing

- Continuous budgeting applied by preparing rolling budgets.
- Continually revise budgets as time passes.
- Rolling budget – company revises entire set of budgets by adding new quarterly budget to replace the quarter just elapsed

Learning Objective C1: Describe the benefits of budgeting.

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Learning Objective P1

Prepare the operating budgets of a master budget for a manufacturing company.

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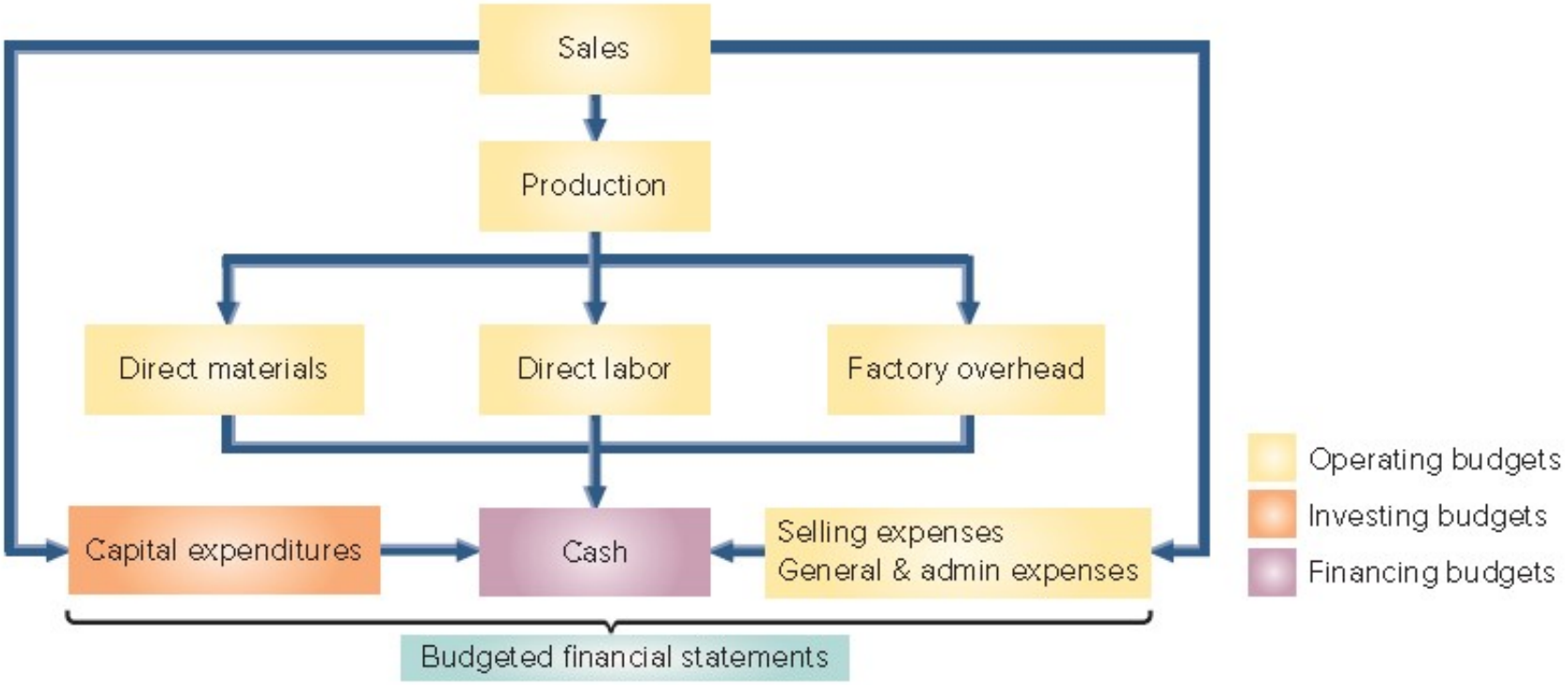
Master Budget Components

Exhibit 22.2



Learning Objective P1: Prepare the operating budgets of a master budget for a manufacturing company.

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Master Budget Balance Sheet

Exhibit 22.3

TORONTO STICKS COMPANY
Balance Sheet September 30

Assets			Liabilities and Equity		
Cash		$ 20,000	Liabilities		
			Accounts payable	$ 7,060	
Accounts receivable		25,200	Income taxes payable (due Oct. 31)	20,000	
Raw materials inventory (178 pounds @ $20)		3,560	Loan payable	10,000	$ 37,060
Finished goods inventory (1,010 units @ $17)		17,170			
			Equity		
Equipment*	$200,000		Common stock	150,000	
Less: Accumulated depreciation	36,000	164,000	Retained earnings	42,870	192,870
Total assets		$229,930	Total liabilities and equity		$229,930

*Equipment is depreciated on a straight-line basis over 10 years (salvage value is $20,000).

Sales Budget

In September, *Toronto Sticks Company* sold 700 hockey sticks at $60 each. Toronto Sticks prepared the following sales budget for the next three months:

Exhibit 22.4

TORONTO STICKS COMPANY
Sales Budget

	October	November	December	Totals
Budgeted sales units	1,000	800	1,400	3,200
Selling price per unit	× $ 60	× $ 60	× $ 60	× $ 60
Total budgeted sales	$60,000	$48,000	$84,000	$192,000

Learning Objective P1: Prepare the operating budgets of a master budget for a manufacturing company.

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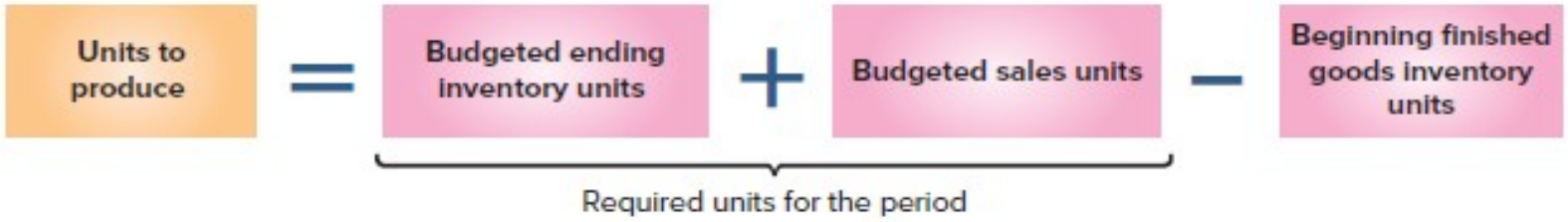
Computing Production Requirements

A manufacturer prepares a production budget, which shows the number of units to be produced in a period.

The production budget is based on the unit sales projected in the sales budget, along with inventory

Exhibit 22.5



Note: A production budget does not show costs; it is always expressed in units of product.

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Production Budget

The production budget is based on the unit sales projected in the sales budget, along with inventory considerations.

Exhibit 22.6

TORONTO STICKS COMPANY
Production Budget

	October	November	December
Budgeted sales units*	1,000	800	1,400
Add: Desired ending inventory			
1. Total required units — Next period budgeted sales units*	800	1,400	900
1. Total required units — Ratio of inventory to future sales	× 90%	× 90%	× 90%
1. Total required units — Desired ending inventory units	720	1,260	810
Total required units	1,720	2,060	2,210
2. Units to produce — Less: Beginning inventory units	1,010	720	1,260
2. Units to produce — Units to produce	710	1,340	950

* From sales budget in Exhibit 22.4; assume January budgeted sales is 900 units.

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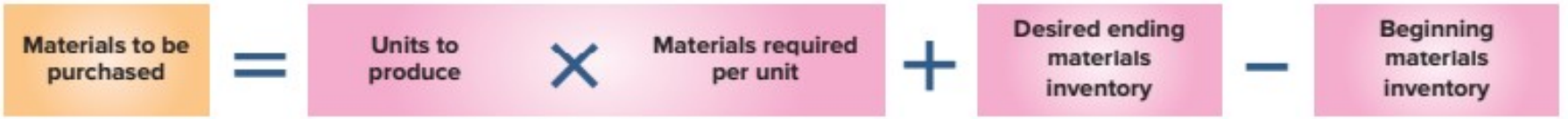
Computing Materials to be Purchased

The direct materials budget is based on the production budget. Expressed in costs.



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Direct Materials Budget

The **direct materials budget** shows the budgeted costs for the direct materials that will need to be purchased to satisfy the estimated production for the period

Exhibit 22.7

TORONTO STICKS COMPANY
Direct Materials Budget

		October	November	December
Materials needed for production	1 Units to produce*	710	1,340	950
	2 Materials required per unit	× 0.5	× 0.5	× 0.5
	Materials needed for production (pounds)	355	670	475
Materials to purchase	3 Add: Desired ending materials inventory (pounds)	335	237.5	247.5†
	Total materials required (pounds)	690	907.5	722.5
	4 Less: Beginning materials inventory (pounds)	178	335	237.5
	Materials to purchase (pounds)	512	572.5	485.0
Cost of materials purchases	5 Materials cost per pound	$ 20	$ 20	$ 20
	Cost of direct materials purchases	$10,240	$11,450	$9,700

* From production budget in Exhibit 22.6. † Computed from January production requirements.

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Computing Cost of Direct labor

The direct labor budget is based on the production budget. Expressed in costs.

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Direct Labor Budget[1]

The **direct labor budget** shows the budgeted costs for the direct labor that will be needed to satisfy the estimated production for the period.

Exhibit 22.8

TORONTO STICKS COMPANY
Direct Labor Budget

		October	November	December
Direct labor hours needed	1 Units to produce*	710	1,340	950
	2 Direct labor hours required per unit	× 0.25	× 0.25	× 0.25
	Direct labor hours needed	177.5	335	237.5
Cost of direct labor	3 Direct labor cost per hour	$ 12	$ 12	$ 12
	Cost of direct labor	$2,130	$4,020	$2,850

* From production budget in Exhibit 22.6.

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Factory Overhead Budget

The factory overhead budget shows the budgeted costs for factory overhead that are needed to complete the estimated production for the period.

Exhibit 22.9

TORONTO STICKS COMPANY
Factory Overhead Budget

		October	November	December
1. Variable overhead	Direct labor hours needed*	177.5	335	237.5
	Variable overhead rate per direct labor hour	× $ 10	× $ 10	× $ 10
	Budgeted variable overhead	1,775	3,350	2,375
2. Fixed overhead	Budgeted fixed overhead	1,500	1,500	1,500
3. Total overhead	Budgeted total factory overhead	$3,275	$4,850	$3,875

*From direct labor budget in Exhibit 22.8.

The variable portion of factory overhead is assigned at the rate of $2.50 per unit of production. The fixed overhead is $1,500 per month.

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Product Cost Per Unit

TSC's can compute product cost per unit from the three manufacturing budgets (direct materials, direct labor, and factory overhead).

For budgeting purposes, TSC assumes it will normally produce 3,000 units of product each quarter, yielding fixed overhead of $1.50 per unit. TSC's other product

Exhibit 22.10

Budgeted Product Cost	Per Unit
Direct materials (0.5 pound of materials × $20 per pound of materials—Exhibit 22.7)	$10.00
Direct labor (0.25 hour of direct labor × $12 per hour of direct labor—Exhibit 22.8)	3.00
Variable overhead (0.25 direct labor hour × $10 variable overhead rate per direct labor hour—Exhibit 22.9)	2.50
Fixed overhead ($1,500 total fixed overhead per month/1,000 units of expected production per month)	1.50
Total product cost per unit	$17.00

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Cost of goods sold budget

The product cost per unit is used to prepare the:

- **Cost of goods sold budget**
- **Budgeted income statement**

	Cost of Goods Sold Budget	
	Budgeted sales units	#
		#
×	Product cost per unit	$

TORONTO STICKS COMPANY Cost of Goods Sold Budget	October	November	December	Totals
Budgeted sales units*	1,000	800	1,400	3,200
Budgeted cost per unit	$ 17	$ 17	$ 17	$ 17
Budgeted cost of goods sold	$17,000	$13,600	$23,800	$54,400

*From sales budget in Exhibit 22.4.

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Selling Expense Budget

Exhibit 22.11

TORONTO STICKS COMPANY Selling Expense Budget	October	November	December	Totals
Budgeted sales*	$60,000	$48,000	$84,000	$192,000
Sales commission of 10%	× 10%	× 10%	× 10%	× 10%
Sales commissions	6,000	4,800	8,400	19,200
Salary for sales manager	2,000	2,000	2,000	6,000
Total selling expenses	$ 8,000	$ 6,800	$ 10,400	$ 25,200

* From sales budget in Exhibit 22.4.

- **TSC pays sales commissions equal to 10 percent of total sales.**
- **TSC pays a monthly salary of $2,000 to its sales manager.**

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General and Administrative Expense Budget

Toronto Sticks Company has general and administrative salaries of $54,000 per year or $4,500 per month.

Exhibit 22.12

TORONTO STICKS COMPANY
General and Administrative Expense Budget

	October	November	December	Totals
Administrative salaries	$4,500	$4,500	$4,500	$13,500
Total general and administrative expenses	$4,500	$4,500	$4,500	$13,500

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Learning Objective P2

Prepare a cash budget for a manufacturing company.

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Capital Expenditures Budget

The **capital expenditures budget** reports expected cash receipts and cash payments related to the sale and purchase of plant assets.

TORONTO STICKS COMPANY Capital Expenditures Budget	October	November	December
Purchase of equipment	$0	$0	$25,000
Total capital expenditures	$0	$0	$25,000

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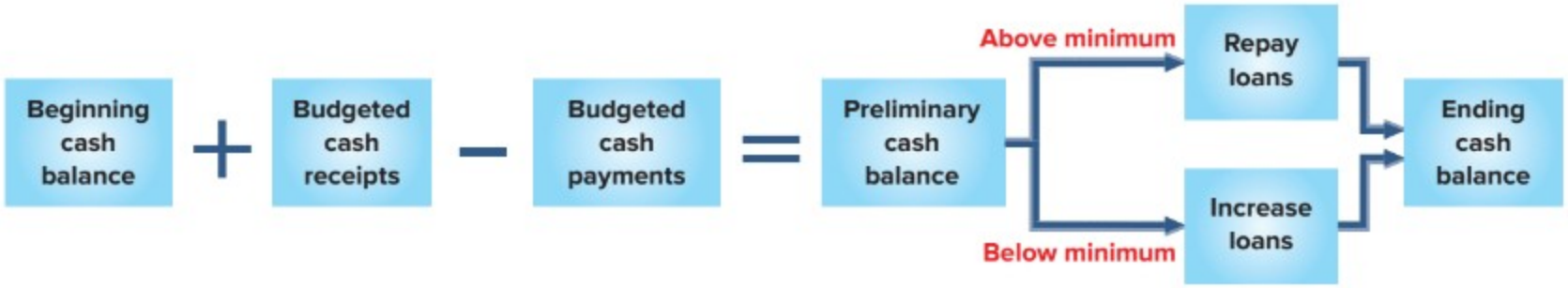
Cash Budget (Financing Budget)

The next step is to prepare the **cash budget,** which shows budged cash receipts and cash payments during the budget period.

The general formula for a cash budget is:

Exhibit 22.13



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Budgeted Cash Receipts from Sales

TORONTO STICKS COMPANY
Schedule of Cash Receipts from Sales

	September	October	November	December
Sales*	$42,000	$60,000	$48,000	$84,000
Cash receipts from:				
Cash sales (40% of current sales)		$24,000†	$19,200	$33,600
Collections of prior period sales (60%)		25,200‡	36,000	28,800
Total cash receipts		$49,200	$55,200	$62,400

*From sales budget in Exhibit 22.4. †$24,000 = 40% × $60,000 ‡$25,200 = 60% × $42,000

Exhibit 22.14

From TSC' sales budget

Cash sales are 40% of each month's sales.

Accounts receivable balance at the end of each month is 60% of that month's budgeted sales.

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Budgeted Cash Receipts: Timing

TORONTO STICKS COMPANY
Schedule of Cash Receipts from Sales

	September	October	November	December
Sales*	$42,000	$60,000	$48,000	$84,000
Cash receipts from:				
Cash sales (40% of current sales)		$24,000†	$19,200	$33,600
Collections of prior period sales (60%)		25,200‡	36,000	28,800
Total cash receipts		$49,200	$55,200	$62,400

*From sales budget in Exhibit 22.4. †$24,000 = 40% × $60,000 ‡$25,200 = 60% × $42,000

TORONTO STICKS COMPANY
Schedule of Cash Receipts from Sales

	October	November	December
Sales	$60,000	$48,000	$84,000
Cash receipts from:			
Cash sales (40% of current sales)			$33,600*
Collections of 1 period ago sales (60% × $48,000 × 80%)			23,040
Collections of 2 period ago sales (60% × $60,000 × 15%)			5,400
Total cash receipts			$62,040

*$33,600 = 40% × $84,000

Learning Objective P2: Prepare a cash budget for a manufacturing company.

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Cash Payments for Direct Materials

TORONTO STICKS COMPANY Schedule of Cash Payments for Direct Materials	September	October	November	December
Materials purchases*	$7,060	$10,240	$11,450	$ 9,700
Cash payments for:				
Current period purchases (0%)		$ 0	$ 0	$ 0
Prior period purchases (100%)		7,060	10,240	11,450
Total cash payments		$ 7,060	$10,240	$11,450

*From direct materials budget in Exhibit 22.7.

Exhibit 22.15

Payments Over Several

TORONTO STICKS COMPANY Schedule of Cash Payments for Direct Materials	September	October	November	December
Materials purchases*	$7,060	$10,240	$11,450	$ 9,700
Cash payments for:				
Current period purchases (20%)		$ 2,048	$ 2,290	$ 1,940†
Prior period purchases (80%)		5,648	8,192	9,160‡
Total cash payments		$ 7,696	$10,482	$11,100

*From direct materials budget in Exhibit 22.7. †$1,940 = 20% × $9,700 ‡$9,160 = 80% × $11,450

Learning Objective P2: Prepare a cash budget for a manufacturing company.

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Preparing Cash Budget

TORONTO STICKS COMPANY Cash Budget	October	November	December
Beginning cash balance	$20,000	$20,000	$ 38,881
Add: Cash receipts from sales (Exhibit 22.14)	49,200	55,200	62,400
Total cash available	69,200	75,200	101,281
Less: Cash payments for			
Direct materials (Exhibit 22.15)	7,060	10,240	11,450
Direct labor (Exhibit 22.8)	2,130	4,020	2,850
Variable overhead (Exhibit 22.9)	1,775	3,350	2,375
Sales commissions (Exhibit 22.11)	6,000	4,800	8,400
Sales salaries (Exhibit 22.11)	2,000	2,000	2,000
Administrative salaries (Exhibit 22.12)	4,500	4,500	4,500
Income taxes (Exhibit 22.3)	20,000	0	0
Dividends	0	3,000	0
Interest on loan			
October ($10,000 × 1%)*	100	0	0
November ($4,365 × 1%)†	0	44	0
Purchase of equipment	0	0	25,000
Total cash payments	43,565	31,954	56,575
Preliminary cash balance	$25,635	$43,246	$ 44,706
Loan activity			
Additional loan	$ 0	$ 0	$ 0
Repayment of loan	5,635	4,365	0
Ending cash balance	$20,000	$38,881	$ 44,706
Loan balance, end of month‡	$ 4,365	$ 0	$ 0

*Beginning loan payable balance from Exhibit 22.3. †Rounded to the dollar.

‡Beginning loan balance + New loans – Loan repayments. For October: $10,000 + $0 – $5,635 = $4,365.

Exhibit 22.16.

Cash

Oct. 1	20,000		
Receipts	49,200		
		43,565	Payments
Prelim. bal.	25,635		
		5,635	Repay loan
Oct. 31	20,000		

Learning Objective P2: Prepare a cash budget for a manufacturing company.

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Preparing the Cash Budget – Loan Activity

Cash paid for interest = Interest rate (%) × Beginning loan balance

Budgeted cash payments for interest	Interest Rate	Beginning Loan Balance	Interest Cost
October	1%	$10,000	$100
November	1	4,365	44
December	1	0	0

Learning Objective P2: Prepare a cash budget for a manufacturing company.

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Learning Objective P3

Prepare budgeted financial statements.

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Budgeted Income Statement

Exhibit 22.17

TORONTO STICKS COMPANY Budgeted Income Statement For Three Months Ended December 31		
Sales (Exhibit 22.4, 3,200 units @ $60)		$192,000
Cost of goods sold (3,200 units @ $17)*		54,400
Gross profit		137,600
Selling, general, and administrative expenses		
Sales commissions (Exhibit 22.11)	$19,200	
Sales salaries (Exhibit 22.11)	6,000	
Administrative salaries (Exhibit 22.12)	13,500	
Interest expense (Exhibit 22.16)	144	38,844
Income before income taxes		98,756
Income tax expense ($98,756 × 40%)†		39,502
Net income		$ 59,254

*$17 product cost per unit from Exhibit 22.10.

†Rounded to the dollar.

- All information in the budgeted income statement is taken from the component budgets we've examined on previous slides.
- The predicted amount of income tax expense for the quarter, computed as 40% of the budgeted pretax income, is included.

Learning Objective P3: Prepare budgeted financial statements.

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Budgeted Balance Sheet

Exhibit 22.18

TORONTO STICKS COMPANY
Budgeted Balance Sheet
December 31

Assets			Liabilities and Equity		
Cash[a]		$ 44,706	Liabilities		
Accounts receivable[b]		50,400	Accounts payable[g]	$ 9,700	
Raw materials inventory[c]		4,950	Income taxes payable[h]	39,502	$ 49,202
Finished goods inventory[d]		13,770	Equity		
Equipment[e]	$225,000		Common stock[i]	150,000	
Less: Accumulated depreciation[f]	40,500	184,500	Retained earnings[j]	99,124	249,124
Total assets		$298,326	Total liabilities and equity		$298,326

Learning Objective P3: Prepare budgeted financial statements.

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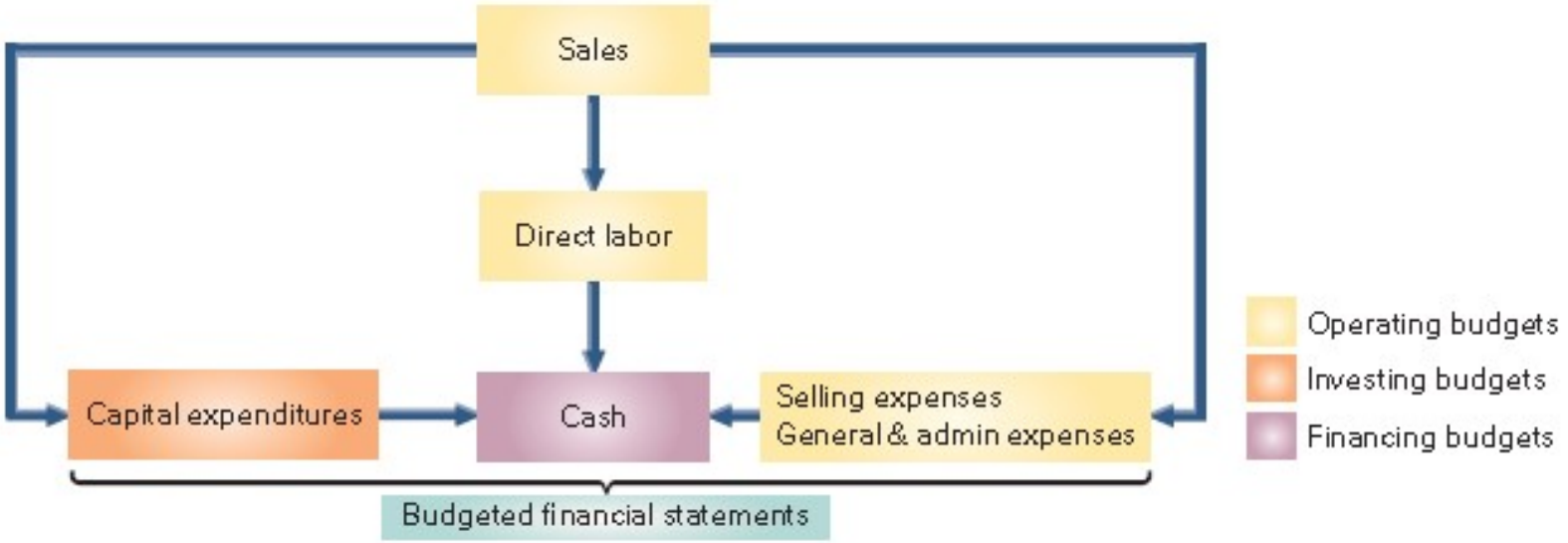
Budgeting for Service Companies

Service providers also use master budgets but typically need fewer operating budgets than manufacturers. Important budgets for a service companies include:

Exhibit 22.19



Learning Objective P3: Prepare budgeted financial statements.

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Learning Objective A1

Prepare a direct labor budget for a service firm and analyze revenue per employee.

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Direct Labor Budget 2

Direct Labor Budget			
	Direct Labor Hours	Direct Labor Cost per Hour	Direct Labor Cost
Data mining and analysis	40	$30	$1,200
Staff investigative analyst	100	40	4,000
Senior forensic accountant	20	50	1,000
Cost of direct labor			$6,200

Exhibit 22.21

Learning Objective A1: Prepare a direct labor budget for a service firm and analyze revenue per employee.

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Revenue per Employee

	Microsoft, Prior Year	Microsoft, Current Year	Hewlett Packard, Current Year
Total revenue	$110,360,000,000	$125,843,000,000	$57,756,000,000
Total employees	131,000	144,000	56,000
Revenue per employee	**$ 842,443**	**$ 873,910**	**$ 1,031,357**

Learning Objective A1: Prepare a direct labor budget for a service firm and analyze revenue per employee.

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Learning Objective P4

Appendix A

Prepare each component of a master budget for a merchandising company.

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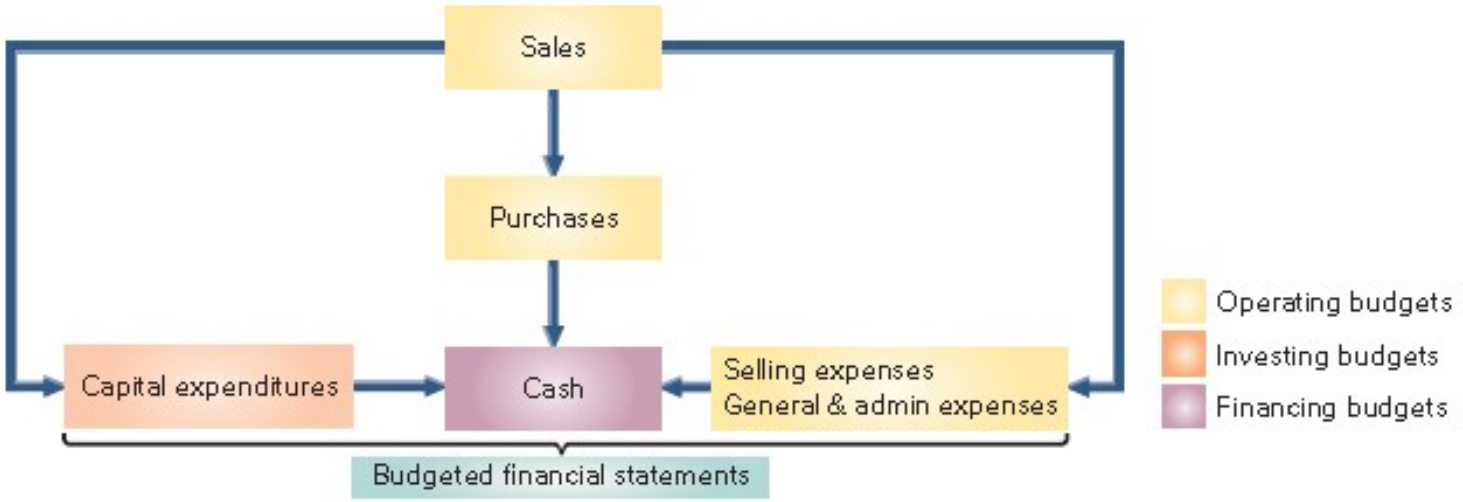
Master Budget Process for a Merchandiser

Unlike a manufacturing company, a merchandiser must prepare a merchandise purchases budget rather than a production budget.

Exhibit 22A.1



Learning Objective P4: Prepare each component of a master budget for a merchandising company.

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Preparing the Merchandise Purchases Budget

The general layout for the purchases budget in equation form is:

Exhibit 22A.2

Let's prepare the purchases budget for Hockey Den.

Learning Objective P4: Prepare each component of a master budget for a merchandising company.

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Merchandise Purchases Budget

Exhibit 22A.3

	HOCKEY DEN Merchandise Purchases Budget	October	November	December
1	Budgeted sales units	1,000	800	1,400
	Add: Desired ending inventory			
	Next period budgeted sales units	800	1,400	900
	Ratio of inventory to future sales	× 90%	× 90%	× 90%
2	Desired ending inventory units	720	1,260	810
	Total required units	1,720	2,060	2,210
	Less: Beginning inventory units	1,010	720	1,260
	Units to purchase	710	1,340	950
	Cost per unit	$ 60	$ 60	$ 60
3	Cost of merchandise purchases	$42,600	$80,400	$57,000

Ending inventory for a month in units, should equal 90% of next month's unit sales.

Learning Objective P4: Prepare each component of a master budget for a merchandising company.

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Schedule of Cash Payments for Merchandise Purchases

Exhibit 22A.4

HOCKEY DEN
Schedule of Cash Payments for Merchandise Purchases

	October	November	December
Merchandise purchases (from Exhibit 22A.3)	$42,600	$80,400	$57,000
Cash payments for:			
Current period purchases (40%)	$17,040	$32,160	$22,800
Prior period purchases (60%)	30,000*	25,560	48,240
Total cash payments for merchandise purchases	$47,040	$57,720	$71,040

*60% of prior period purchases equals the prior period Accounts Payable balance for this company.

Subtract beginning inventory to determine the budgeted number of units to be purchased.

Learning Objective P4: Prepare each component of a master budget for a merchandising company.

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End of Chapter 22

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